

APPENDIX B



**Department of Army
Corps of Engineers
Alaska District**

**Draft
Section 404(b)(1) Evaluation**

Southern Intertie Project

**File No. 2-991212
Turnagain Arm 45**

June 2002

Draft Section 404(b)(1) Evaluation

Department of Army, Corps of Engineers
Proposed Southern Intertie Project
File number: 2-991212, Turnagain Arm 45

Notation: This is a draft Section 404(b)(1) Evaluation based on analysis of the data presented in the Final Environmental Impact Statement (FEIS) and is without a finding of "Compliance or Non-compliance" with the guidelines. The intent of this draft evaluation is to inform the public on the extent of resource impact, subject to the Clean Water Act, and to promote coordination with resource agencies. A final 404(b)(1) Evaluation will be part of the U.S. Army Corps of Engineers (USACE) Record of Decision.

I. Introduction

A. Project Description: The proposed project is to construct a 74-mile, 138kV electrical transmission line between the Kenai Peninsula and Anchorage, in southcentral Alaska. The route for which the applicant has applied would begin at the Soldotna Substation, within the NW1/4, section 26, T. 5 N., R. 10 W., Seward Meridian (SM), east of Soldotna, and proceed as an overhead line in a northeasterly direction across the Kenai Peninsula, following the Enstar natural gas pipeline corridor through the Kenai National Wildlife Refuge (KNWR). The line would cross Turnagain Arm as a submarine cable, entering the arm at Chickaloon Bay, adjacent to Burnt Island, and landing at Oceanview Park in south Anchorage. It would then follow the Alaska Railroad right-of-way north, terminating at the International Substation in the SE1/4, section 36, T. 13 N., R. 4 W., S.M., in Anchorage. This proposal, as submitted by the applicant, follows route options E-South, F, H and K, and is collectively referred to as the Enstar Route.

Approximately 83% of the line would be attached to overhead tower structures, 16% of the line would consist of submarine cabling and approximately 1% would be installed underground. The transmission line would make two aerial crossings of the Kenai River, a navigable water of the United States. At all stream crossings, tower structures would maintain a 200' minimum setback. If possible, wetlands would be spanned. Any tower requiring siting in a wetland would be pile-supported. Submarine electric cable would be threaded under the vegetated intertidal estuaries of Turnagain Arm by use of horizontal directional drilling from adjacent upland areas. To cross Turnagain Arm, a water-jetting machine, towed behind the cable-laying barge, would cut a narrow trench in the basin substrate into which the marine cable would be laid. Tidal currents would redeposit the sediments, closing the trench and burying the cable.

B. Purpose and Need: The Southern Intertie Transmission Line Project (SIP) is a system improvement project. The line would correct existing deficiencies by providing a second line to accomplish the following:

- Increase reliability of the Railbelt electrical system and power supply to consumers by providing a second path for electrical power during interruptions of the existing Quartz Creek line and by reducing load-shedding requirements in case of system disturbances.
- Increase electrical transfer capability of the transmission system between the Kenai Peninsula and Anchorage from 70 megawatts (MW) to 125 MW, reduce operating

costs by allowing for more economical usage of existing generation sources, decrease overall system requirements for spinning reserves, and improve electrical system stability.

- Provide adequate access to power entitlements from the Bradley Lake hydroelectric generating station for the utilities north of the Kenai Peninsula, allow the Bradley Lake generation to be more fully utilized to reduce system-operating costs through increased hydrothermal coordination, and provide additional spinning reserves to the system north of the Kenai Peninsula.

Additional information on the purpose and need of the SIP, including existing system operations, proposed project background, studies conducted, and the benefits and costs analysis can be found in Chapter 1 of the DEIS.

C. Agency Involvement: The USACE received an application for Transportation and Utility Systems and Facilities on Federal Lands, on August 5, 1999, from the Intertie Participants Group (IPG), to construct a 138kV electrical transmission line between the Kenai Peninsula and the City of Anchorage in south-central Alaska. The IPG's proposed route for the transmission line would partially site the project within the Kenai National Wildlife Refuge, the Kenai River Comprehensive Management Plan Boundaries, and the Anchorage Coastal Wildlife Refuge.

Jurisdiction over this project proposal has been established by USACE under three Federal laws. Section 404 of the Clean Water Act (33 U.S.C. 1344) applies to the discharge of dredged or fill material into waters of the United States. The substantive evaluation requirements of this act are within the guidelines developed by the Administrator of the Environmental Protection Agency (EPA) in conjunction with the Secretary of the Army, published in 40 CFR, Part 230 and referred to as the 404(b)(1) Guidelines. Jurisdiction under Section 10 of the Rivers and Harbors Act (33 U.S.C. 403) requires authorization for work in or over any navigable water of the United States. This jurisdiction includes the line spanning the Kenai River and the marine crossing of Turnagain Arm. The applicant's proposal would route the transmission line across the Kenai National Wildlife Refuge (KNWR), a Conservation System Unit identified in the Alaska National Interest Lands Conservation Act (ANILCA) (43 CFR Part 36). Title XI of this Act, Transportation and Utility Systems in and Across, and Access into, Conservation Systems Units, allows authorizing federal agencies to review a proposal in accordance with the procedures set fourth in this title. This review follows the guidelines established in the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321-4347).

The Rural Utilities Service (RUS), of the US Department of Agriculture, is the Lead Federal Agency in the NEPA review for the SIP. The IPG intends to submit an application to RUS for financial assistance to fund partial construction of the transmission line. Pursuant to RUS Environmental Policies and Procedures (7 CFR Part 1794), providing funding for the project would constitute a major federal action for the agency.

The U.S. Fish and Wildlife Service (USFW), as Federal Manager of the KNWR, has permitting authority over the applicants proposed route selection to cross Refuge Lands. The USFW is a cooperating agency in the NEPA review and is responsible for the decision to issue or deny a Right-of-Way permit for the line to cross the KNWR. The USACE, a permitting agency based on the authorities listed above, is also a cooperating agency in the NEPA review of the SIP.

II. Alternatives

A. Overview of Alternatives: All chapter and section references made in this Draft 404(b)(1) Evaluation refer to the SIP DEIS. Chapter 2 contains discussion of the alternatives identified during the scoping process, including alternatives eliminated from detailed study for failing to meet the applicant's purpose and need, and alternatives determined to be impracticable when considering public interest factors. Alternatives carried forward for detailed evaluation

include: 1) the no-action-alternative, 2) the Tesoro alternative (a route generally paralleling the Tesoro gas pipeline along the western edge of the Kenai Peninsula), and 3) the Enstar alternative (the applicant's proposed alternative). Chapter 2 also provides details on construction, operation, maintenance and abandonment of the facilities associated with the alternatives route options.

B. Alternatives Evaluated in Detail: 1) No action: The no-action alternative would preclude realization of the benefits from construction of the SIP. Potential cost savings of the project would remain as costs embedded in the electricity rates paid by consumers. Cost savings would be unrealized in areas of capacity sharing, economic energy transfer, reliability, spinning reserve sharing, reduced line maintenance costs, avoidance of minimum generation on the Kenai Peninsula, and avoidance of the practice of not loading the Quartz Creek transmission line during bad weather and construction. The no-action alternative does not address the problems that the project has been designed to solve and does not meet the applicant's purpose and need objectives. Further discussion of this alternative can be found in Chapter 2.3.1.

2) Tesoro Route: The Tesoro Route (option A) begins at the existing Bernice Lake Substation near Nikiski and generally parallels the Tesoro pipeline along the west coast of the Kenai Peninsula to Pt. Possession. In 1964 Congress modified the west boundary of the KNWR, pulling it inland from the coast, to create a transportation and utility corridor for anticipated future development needs of the Kenai Peninsula Borough. The Tesoro route would be located within this transportation/utility corridor. The cable would be installed underground through Captain Cook SRA, satisfying requirements of the Land and Water Conservation Fund Act (LWCFA). Crossing Native owned lands near Grey Cliff Lake and at Pt. Possession would require a permit pursuant to Section 22(g) of the Alaska Native Claims Settlement Act (ANCSA).

A transition facility at Pt. Possession would convert the overhead line to submarine cable before entering Turnagain Arm. From Pt. Possession, there are three route options being considered for crossing Turnagain Arm, with each option terminating at the existing Pt. Woronzof Substation. Route Option D would cross the Arm from Pt. Possession to Pt. Campbell. From the Pt. Campbell landing, underground cable would continue through Kincaid Park and the Ted Stevens Anchorage International Airport before terminating at the Pt. Woronzof substation. The total length of the Tesoro route utilizing Route Option D is 62.0 miles with an estimated construction cost of \$99.5 million.

Route Option B crosses Turnagain Arm from Pt. Possession to Fire Island. The submarine cable would transition to an overhead line, traverse the length of Fire Island, and convert back to submarine cable to cross the mudflats to the Point Woronzof Substation. This option would require two transition facilities on Fire Island. The submarine cable between Pt. Possession and Fire Island would also encounter undesirable marine conditions that feature extreme tidal currents and rocky substrate. The cable would be exposed to tidal scouring elements that would likely result in more frequent cable failures and increased maintenance costs. The total length of the Tesoro route using Option B is 63.2 miles, with estimated construction costs of \$99.4 million.

Route Option C crosses Turnagain Arm as a submarine cable from Pt. Possession directly to a landing at the Pt. Woronzof Substation. A concern identified with this option is the presence of a 'cable field' located just offshore of the proposed landing site. There are several submarine cables, which cross the Knik Arm between Pt. Mackenzie and Pt. Woronzof, already buried in this area. To avoid laying cables on top of existing cables, Route Option C would land cables south of the Anchorage Waste Water Treatment Facility and access the Pt. Woronzof substation from the east. The length of this route option is 61.3 miles with an estimated construction cost of \$106.2 million.

3) Enstar Route: This route begins as an overhead transmission line at the existing Soldotna substation. There are two route options from this substation, both of which intersect the Enstar Pipeline corridor in section 1, T. 5 N., R. 8 W., SM. Route Option E-North would run north

from the Soldotna substation before turning east to intersect the Enstar Pipeline corridor. This 21.6-mile section of line would primarily run parallel to an existing power line between the Soldotna substation and Enstar Pipeline.

Route Option E-South would replace an existing 69kV transmission line. This route begins by heading south from the Soldotna substation, then turns east and finally to the north. The overhead line would cross the Kenai River twice before intersecting the Enstar Pipeline corridor. Route Option E-South is 19.0 miles long and the IPG's proposed route.

From the point where the above-described route options intersect the existing Enstar Pipeline, the Enstar alternative parallels the pipeline corridor in a northeasterly direction through the KNWR. Along this 38.5 mile section of line, the existing gas line access trail would be utilized to construct the transmission line. The 50' corridor would be widened to approximately 200' in order accommodate the addition of the transmission line. The transmission line would meet Turnagain Arm on the east end of Chickaloon Bay near Burnt Island. A transition facility would convert the overhead line to marine cable where it would continue across the Arm along one of three route options. At each of the three Anchorage landing site options, a transition facility would convert the marine cable back to an underground or overhead line and continue to the International Substation, located at the Chugach Electric Headquarters building near the intersection of Minnesota Drive and International Airport Road.

The three route options across Turnagain Arm fan out from the transition facility located adjacent to Burnt Island. Route Option G would cross the Arm following a due north direction from Burnt Island, landing near Klatt Road in south Anchorage. From a transition facility here, this route would continue as Option J, an overhead line, and parallel Minnesota Drive north, terminating at the International Substation. This Enstar Alternative, following Route Options G and J, is 73.8 miles long and has an estimated construction cost of \$90.1 million.

Route Option I would cross Turnagain Arm from Burnt Island as a marine cable, landing near the confluence of Rabbit Creek in south Anchorage. From a transition facility located here, an overhead line would continue as Route Option M, following the Old Seward Highway north to International Airport Road, and then turning west to the International substation. This Enstar Alternative, along Route Options I and M, is 75.4 miles long with an estimated construction cost of \$90.1 million.

Route Option H crosses Turnagain Arm from Burnt Island to a landing at Oceanview Park in south Anchorage. As Route Option K, the line would continue underground along the edge of Oceanview Park and an adjacent light airplane landing strip to the north. At this point the cable would transition to an overhead line and continue north, within the Alaska Railroad Corporation right-of-way, to the International substation. This route, selected by the IPG as their proposed route and submitted on the ANILCA application, consists of line segments E-South, F, H, and K. Collectively known as the Enstar Route, this proposal is 73.4 miles in length, with an estimated construction cost of \$90.2 million.

Additional information and detailed descriptions of the facilities associated with the Enstar Proposal and optional Tesoro Route alternative can be found in Chapter 2.3.2 and 2.4.

III. Affected Environment

A. Inventoried Environment: The resources identified as being important in the scoping process, inventoried during data collection and described in detail by Chapter 3 include:

- Climate and Air Quality (Chapter 3.2)
- Earth and Water Resources (Chapter 3.3)
- Marine Environment (Chapter 3.4)
- Biological (Chapter 3.5)

- Land Use and Recreation (Chapter 3.6)
- Socioeconomics and Tourism (Chapter 3.7)
- Subsistence (Chapter 3.8)
- Visual (Chapter 3.9)
- Cultural and Historical (Chapter 3.10)
- Electric and Magnetic Fields and Noise (Chapter 3.11)

The DEIS contains resource descriptions, explanation of the data gathering methods, and inventory results. Chapter 3 also describes anticipated project impacts to these resources, and the expected environmental consequences. Information on proposed mitigation measures to minimize resource impacts, and any residual resource damage, is also summarized in Chapter 3.

B. Types of Impacts: Resource quantity and sensitivity were analyzed to determine potential impact levels for the identified resources. The quantity of a resource impacted is simply the summation of affected resource units. For example, known bald eagle nesting sites within .5 mile of the projects' influence zone, can be compared between the alternatives by counting the number of active nesting trees along each route. Determining resource sensitivity requires a more subjective approach. Considerations can include resource values, endangered species listing, existing land use patterns, special area designations, management plan implementation, or other resource parameters. The combination of these two assessment variables determines the level of impact assigned to each resource category.

Impacts are categorized into three primary types:

- 1) Direct impacts are caused by the action and occur at the same time and place.
- 2) Indirect impacts caused by the action occur later in time or are farther removed.
- 3) Cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. These impacts may be individually minor but collectively significant.

Resource impacts can be further categorized into these secondary types:

- 1) Short-term impacts are associated with the initial ground disturbance or construction phase of the project.
- 2) Long-term impacts affect the resource during the operation and maintenance phases, or over the project's lifetime.

Resource impacts are also evaluated to determine their significance. As defined in NEPA, Council on Environmental Quality Regulation 1508.27, significance requires considerations of both context and intensity. The factors of context and intensity are discussed in Chapter 3.1.2. Definitions for significant impact, by resource, were established to provide a means of interpreting which issues are associated with each resource in the project area, which impacts are relevant to the resource, and how those impacts must affect the resource to be considered significant. These definitions are provided in Table 3-1.

Impact significance is evaluated within three levels of context: local, regional, and national. The local context for the SIP is defined as the immediate vicinity of the alternative routes. The regional context depends on resource distribution and interactions. For example, the regional context for evaluation of impact significance on brown bear resources would be the Kenai Peninsula, because the population of brown bears on the Peninsula is believed to experience little, if any, immigration from or emigration to other brown bear populations. A national context considers resource status at the national level, and federal mandates for resource protection. For example, wildlife within the KNWR is considered a national resource due to the USFWS mandate to protect wildlife. Significant impacts on wildlife within the KNWR are considered nationally significant.

A cumulative impact, as defined by the Council on Environmental Quality (40 CFR 1508.7), is the impact on the environment that results from the incremental impact of the action

when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes other such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. These reasonably foreseeable future actions refer to future action projections, or estimates, of what is likely to take place when a proposed action is implemented. They are not part of the proposed action but are projections being made so that future impacts, cumulative and otherwise, can be estimated as required by NEPA. A complete discussion of the SIP cumulative impacts can be found in Chapter 3.12.

Finally, as part of the project description, the IPG has proposed incorporating mitigation measures that minimize construction and maintenance activity impacts to the natural environment. These measures are referred to as 'standard practice project mitigation' and are summarized in Volume II, Table D-1. Where warranted, on a case-by-case basis, mitigation beyond these generic measures has been recommended to further reduce adverse impacts. The selective mitigation measures are identified in Volume II, Table D-2. In discussing the environmental consequences of the proposed project below, descriptions of resource impacts take into consideration the mitigating affects of these measures. A detailed mitigation plan is provided in Volume II of the FEIS.

C. Environmental Consequences to Aquatic Resources Resulting from the Discharge of Fill or Dredged Material: The 404(b)(1) Evaluation is a document based on guidelines set forth in 40 CFR, Part 230. The purpose of these guidelines is to maintain the chemical, physical, and biological integrity of waters of the U.S. by controlling the discharges of fill material. Fundamental to these guidelines is the precept that no discharge of fill material shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. Therefore, the following discussion will focus on aquatic resource characteristics that would be impacted by the proposed project, and the anticipated consequences.

Marine Environment (Chapter 3.4): Waters of upper Cook Inlet and Turnagain Arm are well mixed due to large tidal fluctuations and high current velocities. Salinity, temperature, and suspended sediment loads vary with season, water depth, and tidal cycle. Embedment of the transmission line across Turnagain Arm would result in a discharge of dredged material. Though important differences between the Enstar proposal and Tesoro alternative can be found in the basin substrates, shifting bathymetries, potential impacts from ice scour, and steep shore slopes, a discharge along either route is not expected to have more than a minimal effect on water quality in Turnagain Arm.

A transmission line along IPG's proposed Enstar Route would enter Turnagain Arm on the east side of Chickaloon Bay, near Burnt Island. The Route Options across the Arm (G, H, and I) would fan out from this point and proceed to the three different landing sites. This area of Turnagain Arm is characterized by wide mud flats at low tide and deep glacial sediments across the entire width. Distribution of these sediments, ranging from silty fine sand to sandy silt, indicate about a 90 percent sand content near tidal channels and about 10 percent sand content near shorelines adjacent to Anchorage and Chickaloon Bay. The Turnagain Arm flood tide is stronger than the ebb tide, carrying more sediment into the Arm than is drained out. The geological conditions found in this area of the basin would allow the submarine cable to be embedded in the seafloor, resulting in enhanced reliability, reduced maintenance costs, and a longer cable life.

The transmission line following the Tesoro Route alternative would enter Turnagain Arm at Pt. Possession and follow the eastern flank of Cook Inlet north. All three Route Options (B, C, and D) would cross the mouth of Turnagain Arm, with two options landing at Pt. Woronzof (B, and C), and route option D coming ashore at Pt. Campbell. The landing points on the north side of Turnagain Arm are characterized by wide mud flats, similar to those found with the Enstar

proposal. The submarine cable could be embedded in the sediments here and offer the same reliability advantages listed above.

The southern portion of the Tesoro Route's marine crossing, offshore from Pt. Possession, offers less favorable geologic conditions for marine cable reliability. The Pt. Possession area exhibits easily eroded bluffs that consistently expose a large number of glacially deposited boulders. These boulders, moved by sea-ice rafting and shifted by strong tidal currents, have produced several boulder patches in the western portion of Turnagain Arm. Seafloor boulder patches have been recorded between Pt. Possession and Fire Island, and between Pt. Possession and Pt. Campbell, at water depths between 20 and 50 feet mean low low water (MLLW), and in the deep channels at depths of 60 to 90 feet MLLW. The boulders diminish in size and number to the east of Pt. Possession, near the Chickaloon Bay area. The submarine cable cannot be embedded in areas where scoured bottom conditions or boulder fields occur. Unburied cables are at an increased risk to cable failure from tidal currents, ice scouring and other hazards. Anticipated replacement of damaged submarine cables has been calculated into project maintenance cost estimates, summarized in Table 2-1 of the FEIS.

Along both the Enstar proposal and Tesoro Route alternative, submarine cable would be subject to impacts and scouring from ice floes and pressure ridges. Sea ice forms in Cook Inlet and Turnagain Arm in the autumn, remaining through the winter months and melting with warmer water temperatures in the spring. Much of the ice, formed on tidal flats and lifted during flood tides, is incorporated into large ice floes. Pressure ridges up to 20 feet can form on the floe peripheries from collisions with other floes. Areas most susceptible to ice scouring include the mudflats and adjacent seafloor slopes between Pt. Campbell, Pt. Woronzof, and Fire Island, in the Anchorage Bowl area from Pt. Campbell to Potter Marsh, at Pt. Possession, and in Chickaloon Bay. Turbulent tides, throughout Cook Inlet and Turnagain Arm, create changing conditions in the seafloor profile. Channels cut into the seafloor by the tide are constantly shifting and changing in size, with channel sides being particularly susceptible to erosion.

Saltmarsh estuaries are found in low-lying coastal areas (e.g., below the coastal bluffs in the Anchorage area) and at the mouths of river systems (e.g., Chickaloon River at Chickaloon Bay, Kenai River, and Swanson River in Captain Cook SRA). These estuaries, considered to be extremely sensitive to disturbance, provide some of the most important habitat for wildlife in the study area. They are important feeding and resting areas for migrating waterfowl and shorebirds, especially at Chickaloon Bay. Bears feed on anadromous fish at estuaries at the mouths of streams during the summer and fall, and forage for grasses in the spring. Inter-tidal mudflats and estuarine open water areas function as habitat for low densities of epifaunal marine invertebrates, marine and anadromous fish, and feeding areas for beluga whales (*Delphinapterus leucas*) and harbor seals (*Phoca vitulina*). If impacted, it can take several years for saltmarsh vegetation to recover.

Installation of the transmission line through intertidal transition areas, between terrestrial and marine environments, would utilize similar construction techniques along both routes. The IPG's Enstar proposal would enter Turnagain Arm at the east end of Chickaloon Bay, near Burnt Island, and exit on the Anchorage side at Oceanview Park. On both sides of this Turnagain Arm crossing, submarine cable would be threaded under vegetated saltmarsh estuaries by horizontal directional drilling (HDD) from the adjacent upland bluffs. This construction technique can span distances up to 4000' and allow the submarine cable to be installed under sensitive areas without mechanical trenching. On the waterward side of the saltmarshes, the HDD installed cable would transition into a mechanically excavated trench through the remaining intertidal mud flats. A trench, four feet wide by five feet deep, would be excavated with backhoes or bulldozers during low tide periods with spoilings being sidecast adjacent to the trench. The submarine cable would be laid into the trench and covered with the excavated material. No appreciable environmental consequences are anticipated as a result of trenching tidal mudflats along either the Enstar or Tesoro Routes. The acreages of saltmarsh habitat within the right-of-way of the proposed project alternatives are summarized in Table 3-5 below.

A concern identified with the SIP crossing Turnagain Arm is the recent decline of the Cook Inlet beluga whale population. Beluga whales, which have been included on the state's list of species of special concern, are commonly found in the intertidal and nearshore areas of Turnagain Arm and Cook Inlet. The distribution of beluga whale habitat is shown in Volume II, Figure MV-17. Concentrations of fish occur primarily in the early spring to late fall (March through November), usually at the mouths of rivers, and the whales frequent these waters during this time to feed on smelt and adult salmon. Beluga calving areas in Cook Inlet have not been identified, but it is now believed that calving may occur in May and June, particularly in estuaries such as Chickaloon Bay. Discussions have been held with the National Marine Fisheries Service (NMFS) regarding construction activities and timing windows that would reduce contact with beluga whales. The secondary impacts resulting from cable laying operations are not expected to degrade habitat or result in whale mortality along this route. However, although an analysis has been performed, the cumulative impacts of installing a submarine cable along the Enstar Route are unknown.

| Table 3-5 (DEIS table modified for this document) | | | | |
|---|---|-------------------|------------------------|--------|
| ACREAGES OF WETLAND VEGETATION CROSSED (CLEARED) | | | | |
| FOR THE ALTERNATIVE ROUTES | | | | |
| Route Option | Black Spruce Muskeg | Bogs & Meadows | Saltmarsh ^o | Totals |
| Tesoro Route | | | | |
| A | 0.0 | 77.6 | 0.0 | 77.6 |
| B | 0.0 | 0.0 | 2.8 | 2.8 |
| C | 0.0 | 0.0 | 0.0 | 0.0 |
| D | 0.0 | 0.0 | 0.0 | 0.0 |
| Tesoro (Anchorage) Route | | | | |
| N | 0.0 | 0.0 | 0.5 | 0.5 |
| Enstar Route | | | | |
| E-North | 0.0 | 74.6 | 0.0 | 74.6 |
| E-South | 0.0 | 5.5 | 0.0 | 5.5 |
| F | 72.2 | 57.0 | 0.9 | 130.1 |
| G | 0.0 | 0.0 | 2.3 | 2.3 |
| H | 0.0 | 0.0 | 9.7 | 9.7 |
| I | 0.0 | 0.0 | 1.2 | 1.2 |
| Enstar (Anchorage) Route | | | | |
| J | 0.0 | 0.2 | 0.05 | 0.25 |
| K | 0.1 | 0.0 | 0.0 | 0.1 |
| M | 0.0 | 0.0 | 0.9 | 0.9 |
| Route Comparison of Total Aquatic Impacts | | | | |
| | Tesoro Route: (Environmentally Preferred Alternative) | | 77.6 acres crossed | |
| | Enstar Route: (Applicant's Proposed Route) | | 145.4 acres crossed | |
| °All potential impacts to saltmarsh will be avoided by horizontal directional drilling. | | | | |

Wetlands (Chapter 3.5): As defined by USACE, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The wetlands along each route were inventoried using aerial photographs, National Wetland Inventory maps, and by direct observation while flying each route in helicopters. Distribution of the identified wetlands are summarized in the Vegetation Cover/Wetland Maps in Volume II, Figures MV-6 through MV-8.

As a result of the mitigation measures incorporated into the proposed project, no discharge of fill material is anticipated into any wetland community along either route alternative. The IPG has prescribed utilizing existing pipeline access roads, without improvements, along both routes. In addition, construction activities would be confined to the winter season and only tracked or low-pressure tired equipment would be used within a confined right-of-way area. These restrictions are intended to prevent rutting and drainage pattern changes in areas with compressible soils. Placement of overhead towers for the transmission line would skirt wetlands where possible, and attempt to span wetlands that cannot be avoided. If a tower must be placed in an area with incompetent soils (i.e. peat soils), installation of the foundation will be pile-driven without a discharge. There are no direct wetland impacts anticipated, along either route, from excavation activities or the discharge of fill material.

Vegetation removal, by selective cutting and periodic mowing, will result in a long-term direct impact to wetlands and uplands located within the proposed project corridor. Clearing would be conducted without disturbance to mineral soil (i.e. utilizing machetes and chainsaws, or hydro-axe machines) and these activities are not typically subject to USACE jurisdiction. However, prescribed burns are utilized as a management tool on the KNWR to enhance and create moose habitat. Lack of vegetation along the proposed route, coupled with the presence of the transmission line, would restrict opportunities to conduct controlled burning sessions. Constraining the burn program would inhibit the ability of KNWR staff to create and maintain habitat to support the moose populations prescribed in the Comprehensive Conservation Plan. This would constitute an impact considered significant on a national level. Detailed discussion of these impacts can be found in Chapter 3.3 and 3.5. The impact significance of removing wetland vegetation on the refuge is listed in Table 2-11A, the acres of wetlands impacted are summarized in Table 3-5 (this document), and cumulative wetland impact analysis can be found in Chapter 3.12.2.

Streams, Rivers and Floodplains (Chapter 3.3): The Enstar proposal would cross several streams on the Kenai Peninsula and within the Anchorage Bowl. Primary among these proposed stream crossings is the Kenai River, which the transmission line would span twice. The Kenai River is a navigable water of the U.S. and subject to Section 10 jurisdiction. The E-South route option would replace an existing 69kV line, following the same right-of-way. The new 138kV transmission line would span the Kenai River at the same two locations, River Miles 28.0 and 39.3. Tower placement, adjacent to the Kenai River, would remain at the current locations; only the height of the structures would change, increasing approximately 20 feet. The river crossings are not expected to impact navigational, a primary consideration in the Section 10 review.

Other Kenai Peninsula streams that would be crossed by the Enstar proposal include the Funny River, Chickaloon River, Mystery Creek, Big and Little Indian Creeks, Burnt Island Creek, and several unnamed tributary streams. Within the Anchorage Bowl area, Route Options H and K, would span Campbell Creek and Furrow Creek.

The Tesoro Route alternative would cross the Swanson River, Bishop Creek, Scaup Creek, Otter Creek, Seven Egg Creek, and Miller Creek, all located on the Kenai Peninsula. This route would not cross any streams in the Anchorage area.

Transmission line stream crossings are addressed in the standard practice project mitigation measures, summarized in Table D-1. Item 10 states: "Stream crossings will be as near as possible at right angles to streams. Bridges or culverts would be installed where necessary. All construction and maintenance activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks. Towers will be sited with a minimum distance of 200 feet from streams." Incorporating the project mitigation measures prescribed, would prevent any direct impact from excavation activities or discharges of fill material in the creeks, streams, and rivers crossed by the SIP.

Streamside vegetation removal within the KNWR would result in a long-term significant impact to an aquatic resource, similar to those described to wetland vegetative clearing above. Although this activity would be conducted without disturbance to mineral soil and is not typically captured under USACE jurisdiction, vegetative clearing is considered a nationally significant impact because of its affect on inhibiting the prescribed burn program. Furthermore, other indirect impacts of clearing activities include increased sediment levels in water run-off, increased siltation of on stream substrates, reduced foraging habitat for out-migrating juvenile fish, and decreased cover for wildlife species which utilize the anadromous fish resource. Additional discussion of indirect project impacts is discussed in Chapter 3, and in the cumulative impact analysis summarized in Chapter 3.12.2.

E. Conclusion: Embedment of the submarine cable across Turnagain Arm is the only anticipated discharge of dredged or fill material being proposed by the SIP. Cable embedment is proposed along both the Enstar proposal and Tesoro Route alternative. Anticipated impacts to the marine environment attributable to this discharge have been identified. The potential impacts, when minimized by the prescribed mitigation measures, are not considered significant.

Direct secondary impacts resulting from clearing riparian and wetland vegetation within the KNWR, associated with the Enstar proposal and summarized in Table 2-11A, would be significant. The USFW is mandated to manage the refuge pursuant to the National Wildlife Refuge System Improvement Act of 1997 and ANILCA. Project impacts resulting from the transmission line and right-of-way clearing would constrain the USFW in conducting controlled burns to maintain wildlife habitat as prescribed in the Comprehensive Management Plan. Although clearing activities in riparian areas and wetlands would be similar along the Tesoro alternative, fewer acres of aquatic vegetation would be removed, cleared areas would not be located on the KNWR, and therefore the impacts would not be considered significant. Compliance with the 404(b)(1) guidelines requires that no permit be issued for the discharge of dredged or fill material that would cause or contribute to significant degradation to waters of the U.S. Based on the information within the DEIS, the Tesoro Route is a less damaging practicable alternative to the applicant's Enstar proposal, without significant impacts to aquatic resources.

This draft 404(b)(1) Evaluation is the substantive criterion used in evaluating discharges of dredged or fill material under section 404 of the Clean Water Act. As previously stated, this document is a draft evaluation and is without a finding of "Compliance or Noncompliance" with the Section 404(b)(1) guidelines. It should also be noted that this document does not take into consideration whether the project is in, or contrary to, the public interest. Pursuant to 33 CFR, Par 325.3(c)(1): "The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and in general, the needs and welfare of the people." The USACE permit decision, based on public interest factors and a finding of "Compliance or Noncompliance" with Section 404(b)(1) guidelines, will be made by the Alaska District Engineer and published in the Record of Decision.

Draft
Section 404(b)(1) Evaluation
For the
Proposed Southern Intertie Project
File number: 2-991212, Turnagain Arm 45

I. Evaluation of Compliance with 404(b)(1) Guidelines (restrictions on discharge, 40 CFR 230.10): (An * is marked above the answer that would indicate noncompliance with the guidelines. No * marked signifies the question does not relate to compliance or noncompliance with the guidelines. An "X" simply marks the answer to the question posed.)

a. Alternatives test:

| | | | |
|---|-----|---|----|
| i) Based on the discussion in FEIS, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters? | * | X | No |
| | Yes | | |
| ii) Based on FEIS, if the project is in a special aquatic site and is not water dependent, has applicant clearly demonstrated that there are no practicable alternative sites available? | * | X | No |
| | Yes | | |

b. Special restriction. Will the discharge:

| | | | |
|--|-----|---|----|
| i) violate state water quality standards? <i>(The State of Alaska Department of Environmental Conservation has not yet reviewed the SIP for 401 water quality certification.)</i> | * | X | No |
| | Yes | | |
| ii) violate toxic effluent standards (under Section 307 of the Act) | * | X | No |
| | Yes | | |
| iii) jeopardize endangered or threatened species or their critical habitat? | * | X | No |
| | Yes | | |
| iv) violate standards set by the Department of Commerce to protect marine sanctuaries? | * | X | No |
| | Yes | | |
| v) evaluation of the information in the FEIS indicates that the proposed discharge material meets testing | * | X | No |
| | Yes | | |

| | | |
|---|-----|----|
| exclusion criteria for the following reason(s): | Yes | No |
|---|-----|----|

(X) based on the information contained in the FEIS, the material is not a carrier of contaminants.

() the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

() acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

c. Other restrictions. Will the discharge contribute to significant degradation of "waters of the United States" through adverse impacts to:

| | | |
|---|----------|---------------|
| i) human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites? | * | |
| | <u>X</u> | <u> </u> |
| | Yes | No |

| | | |
|---|----------|---------------|
| ii) life stages of aquatic life and other wildlife? | * | |
| | <u>X</u> | <u> </u> |
| | Yes | No |

| | | |
|---|----------|---------------|
| iii) diversity, productivity and stability of the aquatic life and other wildlife or wildlife habitat or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy? | * | |
| | <u>X</u> | <u> </u> |
| | Yes | No |

| | | |
|--|----------|---------------|
| iv) recreational, aesthetic and economic values? | * | |
| | <u>X</u> | <u> </u> |
| | Yes | No |

| | | |
|--|----------|---------------|
| d. Actions to minimize potential adverse impacts (mitigation). Will all appropriate and practicable steps (40 CFR 230.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem? | * | |
| | <u>X</u> | <u> </u> |
| | Yes | No |

II. Findings of Compliance or Non-compliance (40 CFR 230.12):

- () The discharge complies with the guidelines.
- () The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions listed above (in III.B.2.b.iv) to minimize pollution or adverse effects to the affected ecosystem.
- () The discharge fails to comply with the requirements of these guidelines because:
 - (X) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences. There are on-site uplands available which would minimize the placement of fill in wetlands.
 - (X) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR 230.10(b) or (c).
- () The discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem, namely the use of upland alternatives.